

## WHAT IS CLAIMED IS:

1. A vacuum safety valve for a vacuum system, the vacuum safety valve having a circumference and comprising  
an internal chamber, the internal chamber being adapted to communicate with a vacuum system, and  
at least one selectively openable radial port, the radial port being positioned at a point on the circumference of the safety valve,  
wherein the safety valve is adapted to automatically open the at least one radial port when the vacuum within the safety valve rises above a predetermined vacuum level, the predetermined vacuum level being indicative of a blockage of the airflow path in a vacuum system comprising the safety valve.
2. The vacuum safety valve of claim 1, wherein the opening of the at least one radial port causes a section of the safety valve to be about 50% open to airflow from an environment surrounding the safety valve.
3. The vacuum safety valve of claim 1, wherein the opening of the at least one radial port is brought about by mechanical pressure release.
4. A vacuum system comprising the vacuum safety valve of claim 1 and at least one vacuum hose, the vacuum hose comprising an outer wall and an internal canal and being connected to the vacuum safety valve so that the internal chamber of the safety valve communicates with the internal canal of the vacuum hose.
5. A vacuum safety valve for a vacuum system, the safety valve having a circumference and comprising  
an inner sleeve comprising at least one airflow passageway and an internal channel, the internal channel being adapted to communicate with a vacuum system,  
an outer sleeve comprising at least one airflow passageway, the outer sleeve being positioned to surround at least a portion of the inner sleeve and adapted to permit telescopic movement of the inner sleeve within the outer sleeve, the outer sleeve and inner sleeve being further adapted to assume at least a first position and second position, the airflow passageway of the inner sleeve being at least substantially blocked by the outer sleeve in said first position, and the airflow passageways of the outer sleeve and inner sleeve being substantially aligned to form at least one radial port in said second position, and

a retainer assembly, the retainer assembly being positioned to contact at least one of the inner and outer sleeves and being adapted to retain the inner and outer sleeves in said first position, the retainer assembly being further adapted to permit the inner and outer sleeves to move to said second position when the vacuum within the safety valve rises above a predetermined vacuum level.

6. The vacuum safety valve of claim 5, wherein the predetermined vacuum level is indicative of a blockage of the airflow path in a vacuum system comprising the safety valve.

7. The vacuum safety valve of claim 5, wherein the safety valve further comprises a safety screen, the safety screen being positioned around the circumference of the safety valve and covering at least a portion of the outer sleeve comprising the airflow passageway.

8. The vacuum safety valve of claim 5, wherein the outer sleeve further comprises at least one port, the port being positioned at a distal end of the outer sleeve and being adapted to communicate with the environment surrounding the safety valve.

9. The vacuum safety valve of claim 8, wherein the safety valve further comprises a manual vacuum relief assembly.

10. The vacuum safety valve of claim 9, wherein the manual vacuum relief assembly comprises a plug, the plug being positioned above the port of the outer sleeve and adapted to sealingly engage the port to prevent airflow into the port from an environment surrounding the safety valve, the plug being further adapted to disengage from the port upon application of a force to the plug.

11. The vacuum safety valve of claim 5, wherein the inner sleeve has an outer surface and the outer sleeve has an inner surface, at least a portion of the outer surface of the inner sleeve confronting the inner surface of the outer sleeve, and the retainer assembly being positioned to contact said outer surface of the inner sleeve.

12. The vacuum safety valve of claim 11, wherein the inner sleeve further comprises a groove on the outer surface of the inner sleeve, and the retainer assembly is positioned to engage the groove when the inner and outer sleeves are in the first position.

13. The vacuum safety valve of claim 12, wherein the retainer assembly comprises a nylon spring plunger.

14. The vacuum safety valve of claim 5, wherein the safety valve further comprises a cylindrical tube comprising a cylindrical channel therein, the cylindrical tube being positioned substantially perpendicular to the inner sleeve and adapted to permit airflow communication between the cylindrical channel and the internal channel of the inner sleeve.

15. A vacuum system comprising the vacuum safety valve of claim 5 and at least one vacuum hose, the vacuum hose comprising an outer wall and an internal canal and being connected to the safety valve so that the internal chamber of the safety valve communicates with the internal canal of the vacuum hose.

16. A vacuum system comprising the vacuum safety valve of claim 13 and at least one vacuum hose, the vacuum hose comprising an outer wall and an internal canal and being connected to the safety valve so that the internal chamber of the safety valve communicates with the internal canal of the vacuum hose.

17. A vacuum system comprising the vacuum safety valve of claim 14 and at least one vacuum hose, the vacuum hose comprising an outer wall and an internal canal and being connected to the cylindrical tube so that the cylindrical channel and the internal chamber of the safety valve communicate with the internal canal of the vacuum hose.

18. The vacuum system of claim 15, wherein the vacuum system further comprises a nozzle assembly, the nozzle assembly being connected to the vacuum hose.

19. A method for removing material from an excavation site, the method comprising the steps of

- (a) providing an excavation site,
- (b) providing the vacuum system of claim 4,
- (c) applying a vacuum to the vacuum system such that the pressure within the vacuum system is reduced and gases from an environment surrounding the vacuum system flow into the vacuum system, and
- (d) positioning the vacuum system such that the gases flowing into the vacuum system convey at least a portion of the material into the vacuum system to remove the material from the excavation site.

20. A method for removing material from an excavation site, the method comprising the steps of

- (a) providing an excavation site,
- (b) providing the vacuum system of claim 15,
- (c) applying a vacuum to the vacuum system such that the pressure within the vacuum system is reduced and gases from an environment surrounding the vacuum system flow into the vacuum system,
- (d) positioning the vacuum system such that the gases flowing into the vacuum system convey at least a portion of the material into the vacuum system to remove the material from the excavation site.